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SEED INTELLECTUAL PROPERTY LAW GROUP PLLC
701 FIFTH AVE
SUITE 5400
SEATTLE, WA 98104

EXAMINER	
FERNANDEZ, SUSAN EMILY	

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1651	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/576,298	KORPELA ET AL.	
	Examiner	Art Unit	
	Susan E. Fernandez	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16,37 and 38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,37 and 38* is/are rejected.

7)☒ Claim(s) *1-16,37 and 38* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed February 8, 2011, has been received and entered.

Claims 1-16, 37, and 38 are pending and examined on the merits to the extent they read on the elected subject matter.

Claim Objections

Claims 1-16, 37, and 38 are objected to because of the following informalities: The recitation "microparticles" in the last line of each of claims 1 and 3 should be replaced with "micro particles" for consistency. Furthermore, the comma before the term "binding" in the first line of claim 3 should be deleted. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-16, 37, and 38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite since it is not clear from lines 9 and 10 of the claim which magnetic field strength is adjusted when the at least one magnet (13) and the ferromagnetic tube (12) are moved in relation to each other. Thus, claims 1, 2, 4-16, 37, and 38 are rejected under 35 U.S.C. 112, second paragraph. For examination purposes, the magnetic field strength emitted from the at least one magnet (13) will be considered the magnetic field strength recited in line 10.

Claim 3 is indefinite since it is not clear from lines 10 and 11 of the claim which magnetic field strength is adjusted when the at least one magnet (13) and the ferromagnetic tube (12) are moved in relation to each other. For examination purposes, the magnetic field strength emitted from the at least one magnet (13) will be considered the magnetic field strength recited in line 11.

Additionally, claim 3 is rendered indefinite by the recitation "a desired enzymatic reaction and/or binding reaction" in step (c) since it is unclear how these reaction(s) relate to the binding/isolation/purification/enrichment of a biological component. It is unclear what characteristics would be required to deem a reaction "desired." Though step (c) recites "thereby binding, isolating, purifying, or enriching biological components from the solution," it is not clear from the wording that reactions are considered "desired" if they result in the binding/isolation/purification/enrichment of biological components from the solution.

Also, claim 3 is indefinite since it is confusing when the binding/isolation/purification/enrichment of biological components from the solution occurs in the steps of claim 3. It is unclear whether these effects occur in step (a) (as it has been amended to recite "...to bind…," etc.) or in step (c). Moreover, it is unclear how the micro particles relate to the biological components. It would appear that the micro particles bind to the biological components, and that additional steps are required to isolate, purify and enrich the biological components. Claims 4-16, 37 and 38 depend from claim 3 and thus inherit the deficiencies of claim 3, and therefore are rejected under 35 U.S.C. 112, second paragraph.

Claims 4, 7, and 8 are indefinite when depending from claim 3 as the recitation "a closed reactor unit (60)" lacks antecedent basis. Parent claim 3 does not refer to any "closed reactor

unit" but simply refers to "a reactor unit (60)," and it is not clear that the reactor unit (16) of claim 3 is "closed."

Claim 7 is indefinite when depending from parent claim 3 since claim 3 does not recite that the biological components were ever bound to the micro particles. Therefore, there is lack of antecedent basis for the recitation of the biological components bound to micro particles.

Claims 13-16 are indefinite since it is unclear how they relate to the steps of parent claims 1 or 3. It is unclear how they relate to the enrichment of the desired biological component of claim 1, or to the binding, isolation, purification or enrichment of the biological components of claim 3. Thus, claims 13-16, 37, and 38 are rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuunanen (US 6,040,192. Listed on 11/17/08 IDS) in view of Lamb (US 2,517,325).

Tuunanen discloses a method for determining the presence of an analyte in a sample (claim 1) which is suitable for various purposes, such as immunologic, DNA-hybridization or hormone determinations (column 2, lines 35-36). Figure 1 demonstrates the apparatus for immunodetermination (column 3, lines 48-49). A sample to be examined is inserted into a first well (2) containing a suitable diluter in plate (1), which further comprises other wells (column 4, lines 4-5). Magnetic particles (8) coated with a desired separating reagent (immunologic substance, which have a binding property/activity towards the analyte to be detected) are also brought into the well (column 4, lines 5-7). These magnetic particles are microparticles (column 2, lines 46-48). The desired separating reagent of the magnetic particles reacts to form a complex with the analyte (in the sample) to be determined (column 3, lines 56-58). Therefore, the process of Tuunanen teaches the steps of placing microparticles (which are magnetic) that bind to a desired biological component (analyte contained in the sample) into a solution (diluter) containing the biological component (analyte) in a reactor vessel (well 2), and then allowing the microparticles to bind to the biological component (analyte) in the solution (steps (a)-(b) of claim 1, step (a) of claim 3). (The binding of the biological component (analyte contained in the sample) to the microparticle reads on 'carrying out a desired binding reaction in the reactor unit' as required by step (c) of claim 3.)

A remover (3) is also brought into the first well (2) (column 4, lines 5-7). The remover has a bore (9) containing a movable pin (11) provided with a magnet (10) (column 3, lines 58-

59). The wells are preferably closed with a film which is punctured by the remover (column 2, lines 66-67 and column 3, lines 1-2). Therefore, the system as a whole is considered a closed reactor unit, and is under controlled conditions. See also column 2, lines 52-56 and column 3, lines 54-55, which teach that the mass transfer and necessary reaction time in the well are controlled by the vertical movement of the remover, and thus the conditions of the reactor vessel are considered to be 'controlled.' Also, the temperature is controlled as the equipment may have a thermostatic heater for keeping the plates at a desired temperature (column 5, lines 27-28). Also, because the remover is moved in the well to promote blending (column 4, lines 11-12 and column 3, lines 2-3), the step of moving the remover into the well to promote blending reads on mixing the microparticles in the solution in the reactor unit (step (b) of claim 3). Therefore, Tunnanen teaches that the binding of the microparticles with the desired biological component occurs in a solution in a closed reactor unit under controlled conditions, wherein the closed reactor unit comprises a magnetic unit (the remover 3) comprising at least one magnet (the magnet 10) and the reactor vessel (first well 2), and wherein conditions in the closed reactor unit are controllable.

When the binding reaction is occurring to form an immunocomplex, the movable pin (1) may be in the upper position (column 4, lines 7-11). After incubation, the magnet is moved to the lower position such that the particles (the immunocomplexes comprising the magnetic particles bound to the analyte) gather onto the remover surface (column 4, lines 12-15). Therefore, the reference discloses using the magnetic unit (the remover 3) to collect the desired biological component bound to the microparticles (immunocomplexes) in the solution in the closed reactor unit (step (c) of claim 1, step (d) of claim 3). Thereafter, the remover with the

attached particles is moved into a second well and released into the second well to perform washing or a tracer reaction; the move necessarily requires opening of the closed container (if even just by removing the piercing needle of the remover results in the presence of a hole in the once-closed container (thus the container is then 'opened')) (column 4, lines 13-16); the biological component is necessarily 'enriched' in the well (compared to the first solution) (step (d) of claim 1, steps (e)-(g) of claim 3, steps of claim 2, step of claim 7). The second well contains a washing fluid (column 4, lines 54-55) and the remover can be of such a design that when the remover is in the second well, the pin is pulled up, whereby the particles will again blend with the medium (the fluid in the second well) (column 4, lines 52-54). Clearly this is a teaching of the release of the particles into a solution of another vessel (as required by instant claim 2). Given that the analyte in a solution is removed from other components in a solution in the first well, and then placed in a second well with a washing solution, there is indeed isolation, purification, and enrichment of the analyte. Therefore, Tuunanen teaches limitations recited in instant claims 1-3, 7, 9 (moving the remover in relation to the walls of the well; pumping the solution inside the well by the vertical movement of the remover), claim 13 (since the method of Tuunanen is contemplated for DNA-hybridization, the immunologic substance on the microparticles may bind to DNA) and claim 16 (again, since the method is contemplated for DNA-hybridization).

Furthermore, the limitation of instant claim 4 is taught by Tuunanen as the magnetic particles attach to the remover, thus forming a thin layer over the magnet unit (the remover), and since the remover itself can have a sheath (4) (column 3, lines 50-51), which can read on a

protective membrane, the magnetic particles forming a thin layer over a protective membrane (sheath 4) of the magnet unit (the remover).

Tuunanen also teaches that the separating reagent coated onto the magnetic particles (immunologic agent) can be an antibody (column 1, lines 56-57), thus meeting the limitation in instant claim 13 that an antibody is bound to the surface of the micro particle.

Tuunanen differs from the claimed invention in that it does not teach that the remover (3) comprises a ferromagnetic tube in addition to the magnet (10), and thus does not teach that the magnetic field strength of the magnet (10) can be manipulated by moving said ferromagnetic tube.

Lamb teaches a magnetic probe in which a permanent magnet is adapted to be expelled from or retracted into the housing (column 1, lines 28-31), wherein the effective strength of the permanent magnet is a function of the extent to which the magnet is expelled from the housing (column 1, lines 36-42). Figure 1 shows the device of Lamb, comprising a tube (13) made of a magnetic material such as soft-iron (column 2, lines 40-41), within which is disposed a permanent magnet (19) (column 3, lines 8-9). As the tube (13) is made of magnetic material such as soft-iron, it is considered a ferromagnetic tube. From Figures 2 and 3, it is apparent that the effective strength of the permanent magnet (19) is a direct function of the extent to which the magnet (19) protrudes from the tube (13) (column 3, lines 44-47). The magnet can be expelled from the tube at any desired amount by rotation of a knob (18), and therefore allows for the adjustment of the magnetic strength and a convenient manner to meet desired conditions of use of the magnetic probe (column 3, lines 48-53).

At the time the invention was made, it would have been obvious to the person of ordinary skill in the art to have used a ferromagnetic tube, such as that disclosed in Lamb, over the magnet (10) of the Tuunanen device, when practicing the Tuunanen methods. One of ordinary skill in the art would have been motivated to do this since it would have permitted the adjustment of the magnetic strength of the magnet (10). Furthermore, it would permit changing the magnetic strength according to the step being performed of the Tuunanen invention: higher magnetic strength for gathering the particles in the first well onto the remover surface; lower magnetic strength for releasing the particles into the second well. One would have had a reasonable expectation of successfully incorporating the ferromagnetic tube of Lamb into the system of Tuunanen because Lamb provide detailed information on the system, and the modification would have been well within the technical skill level of the artisan in the field. Thus, it would have been prima facie obvious to modify the system of Tuunanen so as to include such a ferromagnetic tube as taught by Lamb, and carrying out the disclosed process of Tuunanen would thus render the method of instant claims 1-4, 7, 9, 13, and 16 unpatentable.

A holding of obviousness is clearly required.

Furthermore, neither Tuunanen nor Lamb expressly disclose that the first well comprises channels for rotating the solution comprising the sample in and out of the first well, for adding or removing the sample from the first well, for controlling the gases/liquids added into the first well, for controlling pH value and salt content in the first well, or for filtering the gases/liquid added into the first well. However, MPEP 2144.04, Section III indicates that "…broadly

providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art." In the instant case it is submitted that inclusion of a channel to send the sample and the diluter into the first well of the invention rendered obvious by Tuunanen and Lamb would have been obvious to the person of ordinary skill in the art since it would have provided automation of the manual activity of introducing the sample and the diluter into the first well. As the sample/diluter is introduced, the pH value and salt content is indeed changed. Therefore, the channel is for controlling pH value and salt content in the first well. Moreover, see column 6, lines 1-2, which teaches a sample dosing pump. It would have been obvious that the pump comprises a channel leading into the first well for sample introduction. Thus, instant claim 5 is rendered obvious.

Tuunanen and Lamb also differ from the claimed invention in that while they teach moving the remover so as to promote blending (agitation) of the sample and magnetic particles, they do not expressly disclose that the agitation within the first well is by: (1) movement of projections or depressions inside the outer surface of the first well, (2) rotation of the apparatus around its longitudinal axis or by rocking the apparatus, (3) movement of a flexible element in the remover, (4) pushing the bottom of the first well (comprising a stretchy material) downwards, or (5) rotation of the remover (thus rotating the magnets). However, Tuunanen points out that agitation of the medium can alternatively be promoted by a suitable remover and vessel design (column 2, lines 60-61). Therefore, it would have been obvious to have agitated the contents of the first well by other means, including those means listed above, since there would have been a reasonable expectation of success in agitating the medium by these remover and vessel designs.

Modification of the reactor vessel (well) so as to accommodate different samples and/or magnetic particles would have been a matter of routine experimental design choice. Selection of appropriate vessel designs which have the various agitation properties as claimed would have been prima facie obvious to one having ordinary skill in the art, as the ultimate effect (mixing of the sample and magnetic particles to improve contact between the remover and the magnetic particles to permit attraction and binding for removal) would be the same. Therefore, instant claims 8 and 10-12 are rendered obvious.

Furthermore though Tuunanen teaches that the wells are placed in an environmental cabinet that controls the temperatures of the reactor units (see Figure 3 and column 5, lines 10-12, 27-28) and controls the sampling and additions of samples or solutions into the wells (column 5, lines 30-31), Tuunanen does not teach that the environmental cabinet controls the rotation speeds of the magnets or the gas exchange. However, as discussed in the previous paragraph, it would have been obvious to have rotated the remover (comprising the magnets) to agitate the medium. It then would follow that it would also have been obvious to have controlled the rotation speed of the remover (and thus the magnets of the remover) in the environmental cabinet since the skilled artisan would have expected that the agitation of the medium is dependent on the rotation speed (the greater the rotation speed, the greater the amount of agitation). Furthermore, it would have been obvious to control the gas exchange in the environmental cabinet since Tuunanen indicates that the vessels (the wells) may contain an inert vapour phase to improve durability (column 3, lines 7-8). As the gas phase affects the durability,

it would have been obvious to have controlled it to a level that is for optimal durability. Therefore, instant claim 6 is rendered obvious.

Claims 1-16, 37, and 38 rejected under 35 U.S.C. 103(a) as being unpatentable over Tuunanen and Lamb as applied to claims 1-13, and 16 above, and further in view of Ekenberg (US 5,567,326. Listed on 11/17/08 IDS).

As discussed above, Tuunanen and Lamb render claims 1-13, and 16 obvious. However, Tuunanen and Lamb differ from the claimed invention in that they do not expressly disclose that the analyte being detected (and thus isolated and enriched) is a pathological bacteria, virus, parasite, or protozoa.

Ekenberg discloses a method for separating biological substances of interest which involves the separation of magnetic particles from nonmagnetic media (column 5, lines 56-67). The magnetic particles comprise a receptor capable of binding the target substance of interest in the test sample (column 6, lines 11-14). See claim 11, which describes the method, wherein a test medium is introduced into wells and then the magnetically responsive particles are contacted with the target substance in the test medium. Pins are positioned within the wells and are then magnetized by a magnet pack (column 9, lines 32-35). The magnetically responsive particles (bound to the target substance) adhere to the pins, and then the pins are removed from the wells and immersed into a resuspension medium (claim 14). The magnetically responsive particles bearing the target substance then dislodge into the resuspension medium (claim 14). Dislodging the magnetically responsive particles into the resuspension medium facilitates analysis (column

10, lines 37-39). The target substances that are magnetically separated by the method of Ekenberg include cells, cell components, bacteria, parasites, proteins, viruses, specific nucleic acid sequences, DNA, and mRNA (column 6, lines 18-45).

Based on the teachings of Ekenberg it is submitted that, at the time the invention was made, it would have been obvious to the person of ordinary skill in the art to have used the device rendered obvious by Tuunanen and Lamb to separate (thus isolate and enrich) other biological substances, including bacteria, viruses, parasites, other cells such as protozoan cells, cell components, proteins, and specific nucleic acid sequences. Alternatively, it would have been obvious to have practiced the method rendered obvious by Tuunanen and Lamb for determining the presence of analytes other than immunologic substances, including bacteria, viruses, parasites, other cells such as protozoan cells, cell components, proteins, and specific nucleic acid sequences. One of ordinary skill in the art would have been motivated to do this because Ekenberg has successfully demonstrated that magnetic particles can be used to separate these biological substances by binding the biological substances to the magnetic particles to create complexes which are then removed from the solution via the application of a magnetic field. Thus instant claims 15 and 38 (since obvious to isolate/enrich any bacteria/parasite/protozoan) are rendered obvious.

Further still, it would have been obvious to have used the separated magnetic particles bound to the biological substances to carry out chromatographic purification (ion exchange, reverse phase, hydrophobic, affinity) since purification by chromatography for detecting and analyzing biological substances is well known within the art, and techniques for performing such were well within the purview of the artisan of ordinary skill. Thus further modifying the method

rendered obvious by Tuunanen and Lamb to include an additional step of chromatographic purification of the separated biological components would have been prima facie obvious to one having ordinary skill in the art. Therefore, instant claims 14 and 37 are rendered obvious.

A holding of obviousness is clearly required.

Response to Arguments

Applicant's arguments with respect to the rejection of the claims over the prior art, have been considered but are moot in view of the new ground(s) of rejection. Lamb has been introduced as prior art in view of the amendment.

With respect to the rejection of claim 3 under 35 U.S.C. 112, second paragraph, the applicant argues that the skilled artisan would readily appreciate that a "desired enzymatic reaction or binding reaction" would depend on the particular application. However, claim 3 does not recite that the biological components or the reaction(s) serve for any application, or that they depend on the binding/isolation/purification/enrichment of a biological component.

With respect to the rejection of claim 13 under 35 U.S.C. 112, second paragraph, the applicant asserts that claim 13 recites different components bound to the microparticles, which the skilled artisan would understand allows different biological components to be bound, isolated, purified, or enriched by the microparticles. However, claims 13 does not recite that these components are for the purpose of allowing the biological component of claim 1 or claim 3 to be bound, isolated, purified, or enriched by the microparticles. Moreover, the components listed in claim 13 can be considered the "desired biological component" of claim 1, or the

biological component recited in claim 3. As there is this confusion, claim 13 must remain rejected under 35 U.S.C. 112, second paragraph.

The applicant argues against the 35 U.S.C. 112, second paragraph rejection of claim 14 by asserting that the recited chromatographic purification of claim 14 is the use of the microparticles to carryout chromatographic purification of the biological components. However, claim 14 does not recite that this purification is of the biological components. Moreover, it is unclear how chromatographic purification of the biological components with the microparticles can be performed, given that claim 1 already teaches a purification (magnetic enrichment) of the biological component and claim 3 already teaches purification of the biological component (which is also expressed as isolation and enrichment). Claim 14 does not express how the microparticles can be used for chromatographic purification after or over the course of the steps of claims 1 and 3. Thus, the 35 U.S.C. 112, second paragraph rejection over claim 14 must be maintained.

Furthermore, the applicant argues that it is clear from claim 15 that it is directed to isolating or enriching biological components that are pathological bacteria, etc. However, claim 15 does not specify that the list of organisms (pathological bacteria, viruses, parasites, or protozoans) are the "desired biological component" of claim 1 or the "biological component" of claim 3. Thus, claim 15 is still considered indefinite.

Similarly, the applicant argues that it is clear that claim 16 is directed to purifying a subject of biological components of claims 1 and 3, namely DNA, RNA, mRNA, proteins, peptides, cells, or cell organelles. However, claim 16 does not specify that DNA, RNA, mRNA, proteins, peptides, cells, and cell organelles are considered the biological components recited in

claims 1 and 3. Therefore, the 35 U.S.C. 112, second paragraph rejection over claim 16 must be maintained.

No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan E. Fernandez whose telephone number is (571)272-3444. The examiner can normally be reached on Mon-Fri 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Allison M. Ford/
Primary Examiner, Art Unit 1653

Susan E Fernandez
Examiner
Art Unit 1651

sef